UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/361,803	07/27/1999	MITSUHIRO KUNIEDA	35.G2440	5976

5514 7590 06/05/2003

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER
RODEE, CHRISTOPHER D

ART UNIT	PAPER NUMBER
1756	

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

HG

Office Action Summary	Application No.	Applicant(s)	
	09/361,803	KUNIEDA ET AL.	
	Examiner	Art Unit	
	Christopher D RoDee	1756	

-- Th MAILING DATE of this communication appears on th cov r she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 May 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 May 2003 has been entered. The amendment filed 3 March 2003 has been entered as requested in the RCE filing.

Response to Arguments

In response to applicant's comments in the request for reconsideration the Examiner notes that there does appear to be disagreement as to whether or not applicants failed to seasonably challenge the Examiner's taking of Official Notice concerning the exposure means in the electrophotographic apparatus and the process cartridge. In response, the Examiner notes that in the Office action of mailed May 16, 2000, the Examiner stated, "The Office takes Official Notice that the claimed process cartridge and electrophotographic apparatus are well known in the art. Such devices with the claimed means are exceedingly well know[n]." The means of the apparatus included an exposure means "where the exposure means comprises a semiconductor laser having an oscillating wavelength of 380 to 500 nm as an exposure light source" (see original claim 12). In response to this statement applicants noted that the applied Pai '102 reference failed to disclose the claimed exposure means comprising a semiconductor laser having an oscillating wavelength of 380 to 500 nm as an exposure light source (response p. 10). The other applied references were criticized for similar reasons. However, there was no

challenge to the Examiner's Official Notice in this Office action. Applicants now state that one cannot instantly and questionably demonstrate that the notice language is well-known without some citation. Applicants state that they have the right to contest the Examiner's position. The Examiner agrees that applicants did indeed have the right to challenge the position. However, they did not make such a challenge at the first opportunity. At this point the Office Notice becomes admitted prior art.

With respect to the process cartridge claims, the claimed exposure means comprising a semiconductor laser having an oscillating wavelength of 380 to 500 nm as an exposure light source is not part of the process cartridge. It is part of the apparatus from which the process cartridge is mountable to and detachable from. The apparatus, however, is not part of the claims. The process cartridge requires the specified photosensitive member and at least one means selected from a charging means, a developing means, and a cleaning means. No exposure means is present in the process cartridge. The Official Notice is thus not particularly pertinent to the process cartridge claims.

The Examiner notes that applicants do appear to agree that the general structure of the apparatus and process cartridge are well known in the art (see response paragraph spanning pp. 10 & 11).

Although the Examiner maintains the position that applicants have admitted that the exposure means comprising a semiconductor laser having an oscillating wavelength of 380 to 500 nm as an exposure light source is prior art, the Examiner has cited references pertinent to this issue as a supplement to the rejections of record.

Claim Objections

Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 13 specifies the semiconductor laser wavelength as being from 400 to 450 nm. As discussed above, the exposure means that contains the semiconductor laser is not part of the process cartridge. The exposure means is part of the apparatus that the process cartridge is mountable to and demountable from. There exposure means appears to have no limitation on the process cartridges ability to mount or demount from the apparatus. Thus, claim 13 fails to provide any further limitation to the process cartridge. If applicants take the position that the apparatus provides some type of structural or compositional limitation to the process cartridge they are asked to clarify in the response.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai *et al.* in US Patent 6,025,102 in view of *Organic Photoreceptors for Imaging Systems*, to Borsenberger, pp. 330-338, and further in view of JP 01-84265, or Kawamorita *et al.* in US Patent 5,202,214, or Kovacs in US Patent 5,373,313.

Pai and Borsenberger were described throughout prosecution and those descriptions are pertinent to the instant claims. Particularly with respect to the new dependent claims, Pai's charge transporting layer contains compounds which are free of long chain alkyl carboxylate

groups (first charge transport compounds) such as those given by the formula in column 12, line 35, forward. These compounds are substituted arylamines according to the formula (1) and also meet the formula (4) as the disclosed biphenyl diamines. Further, the disclosed amine compounds in col. 13, l. 46-51 also meet the requirements of the claimed formulae (1) and (4) when the Ar groups are substituted. Also see Example 1 where TBD is exemplified. This compound meets the requirements of the formulae (1) and (4). The general formula at column 12, line 35 meets the requirements of the instant formula (2) and (3) when Z is the carbazole or the fluorone group and Ar and Ar' are phenyl or biphenyl groups of the instant claims. Note that Ar_{2-3} may be substituted, such as by one of the amines in the formula at column 12, line 35.

The charge transporting layer components (first and second charge transporting compounds) are selected so that the final charge transport layer is transparent to radiation in the range of exposure, which is suggested as 400 to 800 nm. This is the wavelength at which the photoconductor is to be used (i.e., the exposure wavelength where the photoconductor is sensitive). The artisan would recognize this as the wavelength of sensitivity of the charge generation material.

Pai and Borsenberger remain combinable for the reasons of record.

The references do not disclose the claimed process cartridge means and apparatus means. However, the Examiner understands applicants to agree that the claimed structure (i.e., the means) of the mountable/demountable process cartridge and the electrophotographic apparatus are well known in the art, except for the semiconductor laser having the claimed oscillation wavelength (see response paragraph spanning pp. 10 & 11). The Examiner maintains the position that an electrophotographic apparatus having the specified means including the exposure means where this means comprises a semiconductor laser having an oscillating wavelength of 380 to 500 nm as an exposure light source has been admitted as prior

art. The Examiner also reiterates the position above that the process cartridge does not require the specified exposure means.

The following references are cited in the event it is found that applicants did seasonably challenge the Official Notice concerning the exposure means semiconductor laser and its wavelength.

JP 1-084265 discloses an electrophotographic recording device having a photosensitive body and as an exposure source a laser light having a wavelength of from 400 to 600 nm, which is generated by a semiconductor laser. The photosensitive member is specifically chosen to be sensitive within this wavelength. According to an oral translation obtained by the Examiner at the PTO, Figure 3 discloses a prior art electrophotographic apparatus having a semiconductor laser **3** that generates a laser beam **4**, a charger **2**, a developing device **5**, a recording sheet **6**, a fixing device **7**, a charge erasing light **8**, and a cleaning device **9**. Each of these devices is placed around a photosensitive drum **1**.

Kawamorita discloses a process of making an electrophotographic photosensitive member. In column 1, the reference states, "in designing an electrophotographic photosensitive member which is equipped with the composite function of the copying machine using plain paper and the laser beam printer or laser facsimile, sufficient spectrosensitivity is required in an expanded range inclusive of from a visible range of about 400 nm to an infrared range of about 800 nm which is the wave length range of the semiconductor laser beam" (emphasis added). Clearly the reference discloses that a semiconductor laser beam has a wavelength of about 400 nm to about 800 nm, which is the same range as discussed for exposure in Pai (col. 10, top).

Kovacs discloses an electrophotographic imaging apparatus as seen in Figure 1. Thie device has a photoconductive belt **10** consisting of a photoconductive surface and an electrically conductive substrate and mounted for movement past a charging station **A**, an exposure station

B, a first development station **C**, a second development station **D**, a first uniform exposure station **E**, a third development station **F**, a second uniform exposure station **G**, a fourth development station **H**, a pre-transfer charging station **I**, a transfer station **J**, a fusing station **K** and a cleaning station **L** (col. 5, l. 56-68). A quad laser semiconductor structure **26** emits four different wavelength laser beams, designated laser beams **28**, **30**, **32** and **34**, at about 450, 540, 670, and 830 nanometers, respectively in the blue, green, red and infrared wavelengths (col. 6, l. 31-49). The blue exposure wavelength is within the wavelength permitted in the instant claims.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to choose charge transporting compounds which are not absorbing at wavelengths such as from 400 to 500 nm (i.e., at or near zero absorbance) because Pai teaches that the charge transport layer should not be absorbing in the portion of the 400 to 800 nm wavelengths where the charge generation compound absorbs while Borsenberger teaches that well known charge generation materials such as perylene absorb in the 400 to 500 nm range. Thus, in order to practice the invention suggested by Pai in the exposure area taught as useful, the artisan would select substituents for the charge transporting compound so that the compound does not absorb or minimally absorb in the spectra of the charge generation materials (e.g., perylenes), which absorb in the area of the spectra of interest.

The artisan would have found it obvious to use the obvious photoreceptor in the well known process cartridge or electrophotographic apparatus because these devices permit the artisan to automate the copying process for home or office settings (e.g., standard photocopier or laser jet printer) and include a photosensitive member. The artisan would have found it obvious to match the exposure source in the device or apparatus to the sensitivity of the photogenerator to obtain maximum charge generation effect, such as by use of a semiconductor

laser that generates light within the range disclosed by Pai. The supporting JP reference, Kovacs, and Kawamorita disclose semiconductor lasers generating wavelengths within this range. The artisan would have found it obvious to optimize the wavelength of exposure and the directly related sensitivity of the charge generation material such as to 400 nm, which is specifically disclosed by Pai, Borsenbeger, Kawamorita, and the JP reference, or to a wavelength of 450 nm, which is specifically taught for semiconductor laser devices by Kovacs.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 703 308-2465. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 703 308-2464. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

CHRISTOPHER RODEE
PRIMARY EXAMINER

cdr
June 2, 2003